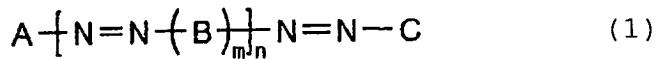


WHAT IS CLAIMED IS:

1. An ink set comprising a plurality of inks different in hues, wherein the plurality of inks includes a black ink containing a coloring agent that is a dye having: a  $\lambda_{max}$  of 500 nm to 700 nm; a half value width of 100 nm or more in an absorption spectrum of a dilute solution normalized to an absorbance of 1.0; and a forced fading rate constant of  $5.0 \times 10^{-2}$  [hour<sup>-1</sup>] or less, in which the forced fading rate constant is decided by dissolving and/or dispersing the dye in an aqueous medium to form an ink composition for ink jet recording, printing the ink composition on a reflection type medium, thereafter measuring a reflection density through a Status A filter, specifying one point having a reflection density ( $D_B$ ) in an yellow region of 0.90 to 1.10 as an initial density of the ink, forcedly fading the printed matter by use of an ozone fading tester that can regularly generate 5 ppm of ozone, and determining the time taken until the reflection density reaches 80% of the initial density.

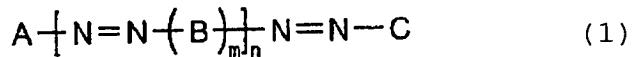
2. An ink set comprising a plurality of inks different in hues, wherein the plurality of inks includes a black ink containing a coloring agent that is a dye represented by the following general formula (1), the dye having: a  $\lambda_{max}$  of 500 nm to 700 nm; and a half value width of 100 nm or more in an absorption spectrum of a dilute solution normalized to an

absorbance of 1.0:



wherein A, B and C each independently represents an aromatic group or a heterocyclic group, which may be substituted, m is an integer of 1 or 2, and n is an integer of 0 or more, with the proviso that at least one of A, B and C is a heterocyclic group which may be substituted.

3. The ink set described in claim 1, wherein the dye is a compound represented by the following general formula (1):



wherein A, B and C each independently represents an aromatic group or a heterocyclic group, which may be substituted, m is an integer of 1 or 2, and n is an integer of 0 or more, with the proviso that at least one of A, B and C is a heterocyclic group which may be substituted.

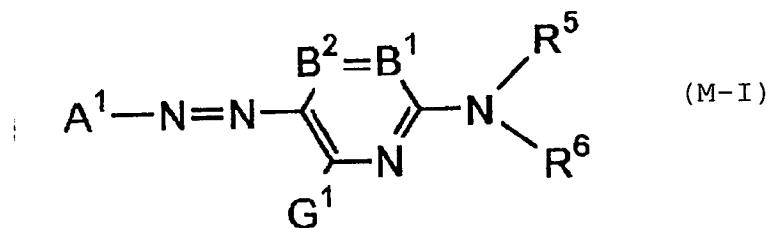
4. The ink set described in claim 1 or 2, which further comprises at least one dye having a  $\lambda_{max}$  of 350 nm to 500 nm.

5. The ink set described in claim 2 or 3, wherein n and

m in the formula (1) are 1.

6. The ink set described in claim 2 or 3, wherein at least two of A, B and C in the general formula (1) are a heterocyclic group which may be substituted.

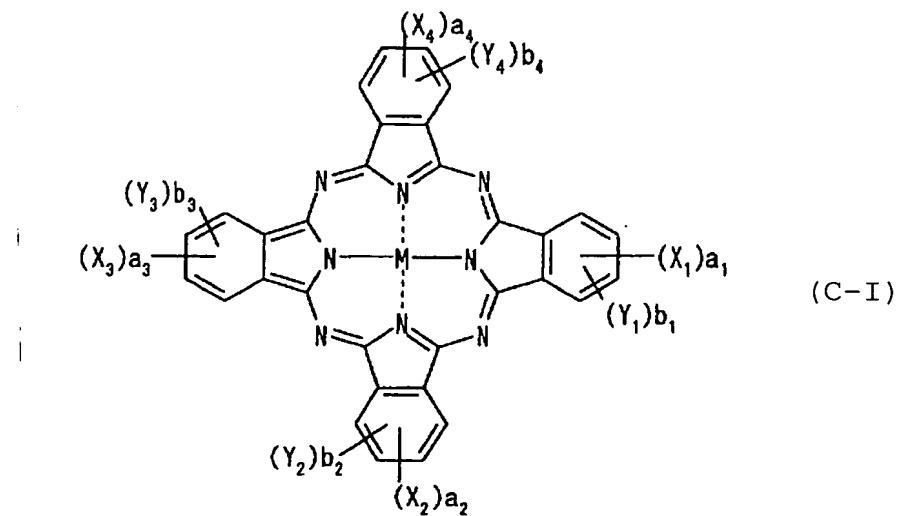
7. The ink set described in claim 1 or 2, which further comprises at least a coloring agent represented by the following general formula (M-I) as the magenta ink:



wherein A<sup>1</sup> represents a residue of a 5-membered heterocyclic diazo component A<sup>1</sup>-NH<sub>2</sub>; B<sup>1</sup> and B<sup>2</sup> each represent a nitrogen atom, -CR<sup>1</sup>= and -CR<sup>2</sup>=, and when one of B<sup>1</sup> and B<sup>2</sup> represents a nitrogen atom, the other represents -CR<sup>1</sup>= or -CR<sup>2</sup>=; R<sup>5</sup> and R<sup>6</sup> each independently represents a hydrogen atom, an aliphatic group, an aromatic group, a heterocyclic group, an acyl group, an alkoxy carbonyl group, an aryloxy carbonyl group, a carbamoyl group, an alkyl- or arylsulfonyl group or a sulfamoyl group, which may further have a substituent group; G<sup>1</sup>, R<sup>1</sup> and R<sup>2</sup> each independently represents a hydrogen atom, a halogen atom, an

aliphatic group, an aromatic group, a heterocyclic group, a cyano group, a carboxyl group, a carbamoyl group, an alkoxy carbonyl group, an aryloxycarbonyl group, a heterocyclic oxycarbonyl group, an acyl group, a hydroxyl group, an alkoxy group, an aryloxy group, a heterocyclic oxy group, a silyloxy group, an acyloxy group, a carbamoyloxy group, an alkoxy carbonyloxy group, an aryloxycarbonyloxy group, an amino group (containing a heterocyclic amino group and an anilino group), an acylamino group, a ureido group, a sulfamoylamino group, an alkoxy carbonylamino group, an aryloxycarbonylamino group, an alkyl- or arylsulfonylamino group, a heterocyclic sulfonylamino group, a nitro group, an alkyl- or arylthio group, an alkyl- or arylsulfonyl group, a heterocyclic sulfonyl group, an alkyl- or arylsulfinyl group, a heterocyclic sulfinyl group, a sulfamoyl group, a sulfo group or a heterocyclic thio group, which may be further substituted; and R<sup>1</sup> and R<sup>5</sup>, or R<sup>5</sup> and R<sup>6</sup> may combine with each other to form a 5- or 6-membered ring.

8. The ink set described in claim 1 or 2, which further comprises a coloring agent represented by the following general formula (C-I) as the cyan ink:



wherein  $X_1$ ,  $X_2$ ,  $X_3$  and  $X_4$  each independently represents  $-\text{SO}-Z_1$ ,  $-\text{SO}_2-Z_1$ ,  $-\text{SO}_2\text{NR}_{21}\text{R}_{22}$ ,  $-\text{CONR}_{21}\text{R}_{22}$  or  $-\text{CO}_2\text{R}_{21}$ ;  $Z_1$  represents a substituted or unsubstituted alkyl group, a substituted or unsubstituted cycloalkyl group, a substituted or unsubstituted alkenyl group, a substituted or unsubstituted aralkyl group, a substituted or unsubstituted aryl group or a substituted or unsubstituted heterocyclic group;  $R_{21}$  and  $R_{22}$  each independently represents a hydrogen atom, a substituted or unsubstituted alkyl group, a substituted or unsubstituted cycloalkyl group, a substituted or unsubstituted alkenyl group, a substituted or unsubstituted aralkyl group, a substituted or unsubstituted aryl group or a substituted or unsubstituted heterocyclic group;  $Y_1$ ,  $Y_2$ ,  $Y_3$  and  $Y_4$  each independently represents a univalent

substituent group;  $a_1$  to  $a_4$  and  $b_1$  to  $b_4$  each represents the substituent group number of  $X_1$  to  $X_4$  and  $Y_1$  to  $Y_4$ , respectively,  $a_1$  to  $a_4$  each independently represents a number of 0 to 4, but there is no case where all are 0 at the same time,  $b_1$  to  $b_4$  each independently represents a number of 0 to 4, and when  $a_1$  to  $a_4$  and  $b_1$  to  $b_4$  each represents a number of 2 or more, pluralities of  $X_1$ 's to  $X_4$ 's and  $Y_1$ 's to  $Y_4$ 's may each be the same or different; and M is a hydrogen atom, a metal atom, or an oxide, hydroxide or halide thereof.

9. The ink set described in claim 1 or 2, which further comprises a coloring agent represented by the following general formula (Y-I) as the yellow ink:



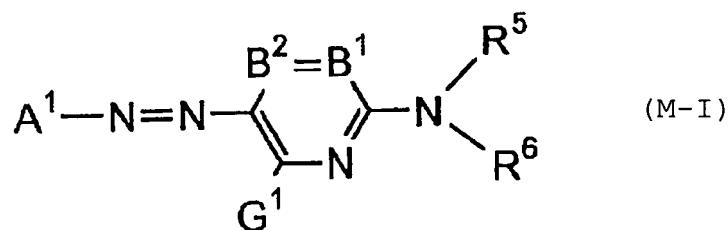
wherein  $A^{11}$  and  $B^{11}$  each independently represents a heterocyclic group which may be substituted.

10. The ink set described in claim 7, wherein the magenta ink includes a set of two or more inks different in ink concentration, and the ink concentration of one magenta ink is 0.05 to 0.5 time that of the other magenta ink.

11. The ink set described in claim 8, wherein the cyan ink includes a set of two or more inks different in ink concentration, and the ink concentration of one cyan ink is 0.05 to 0.5 time that of the other cyan ink.

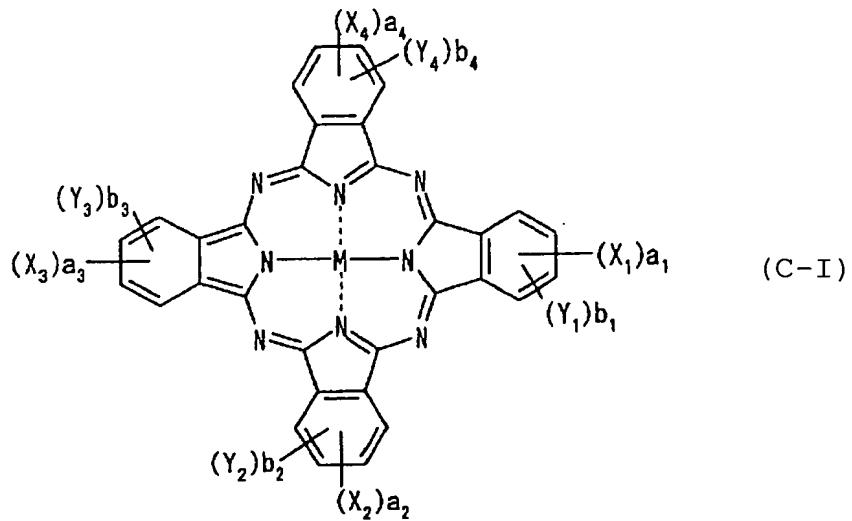
12. A color ink cartridge comprising at least a black ink, wherein the black ink includes the coloring agent described in claim 1 or 2.

13. The ink cartridge described in claim 12, which further comprises: a coloring agent represented by the following general formula (M-I) as the magenta ink; and a coloring agent represented by the following general formula (C-I) as the cyan ink:



wherein A<sup>1</sup> represents a residue of a 5-membered heterocyclic diazo component A<sup>1</sup>-NH<sub>2</sub>; B<sup>1</sup> and B<sup>2</sup> each represent a nitrogen atom, -CR<sup>1</sup>= or -CR<sup>2</sup>=, and one of B<sup>1</sup> and B<sup>2</sup> represents a nitrogen atom, the other represents -CR<sup>1</sup>= or -CR<sup>2</sup>=; R<sup>5</sup> and R<sup>6</sup> each independently

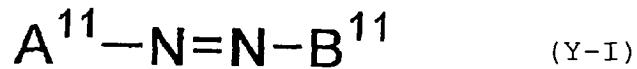
represents a hydrogen atom, an aliphatic group, an aromatic group, a heterocyclic group, an acyl group, an alkoxycarbonyl group, an aryloxycarbonyl group, a carbamoyl group, an alkyl- or arylsulfonyl group or a sulfamoyl group, which may further have a substituent group;  $G^1$ ,  $R^1$  and  $R^2$  each independently represents a hydrogen atom, a halogen atom, an aliphatic group, an aromatic group, a heterocyclic group, a cyano group, a carboxyl group, a carbamoyl group, an alkoxycarbonyl group, an aryloxycarbonyl group, a heterocyclic oxycarbonyl group, an acyl group, a hydroxyl group, an alkoxy group, an aryloxy group, a heterocyclic oxy group, a silyloxy group, an acyloxy group, a carbamoyloxy group, an alkoxy carbonyloxy group, an aryloxycarbonyloxy group, an amino group (containing a heterocyclic amino group and an anilino group), an acylamino group, a ureido group, a sulfamoylamino group, an alkoxycarbonylamino group, an aryloxycarbonylamino group, an alkyl- or arylsulfonylamino group, a heterocyclic sulfonylamino group, a nitro group, an alkyl- or arylthio group, an alkyl- or arylsulfonyl group, a heterocyclic sulfonyl group, an alkyl- or arylsulfinyl group, a heterocyclic sulfinyl group, a sulfamoyl group, a sulfo group or a heterocyclic thio group, which may be further substituted; and  $R^1$  and  $R^5$ , or  $R^5$  and  $R^6$  may combine with each other to form a 5- or 6-membered ring:



wherein  $X_1$ ,  $X_2$ ,  $X_3$  and  $X_4$  each independently represents  $-SO-Z_1$ ,  $-SO_2-Z_1$ ,  $-SO_2NR_{21}R_{22}$ ,  $-CONR_{21}R_{22}$  or  $-CO_2R_{21}$ ;  $Z_1$  represents a substituted or unsubstituted alkyl group, a substituted or unsubstituted cycloalkyl group, a substituted or unsubstituted alkenyl group, a substituted or unsubstituted aralkyl group, a substituted or unsubstituted aryl group or a substituted or unsubstituted heterocyclic group;  $R_{21}$  and  $R_{22}$  each independently represents a hydrogen atom, a substituted or unsubstituted alkyl group, a substituted or unsubstituted cycloalkyl group, a substituted or unsubstituted alkenyl group, a substituted or unsubstituted aralkyl group, a substituted or unsubstituted aryl group or a substituted or unsubstituted heterocyclic group;  $Y_1$ ,  $Y_2$ ,  $Y_3$  and  $Y_4$  each independently represents a univalent substituent group;  $a_1$  to  $a_4$  and  $b_1$  to  $b_4$  each represents the

substituent group number of  $X_1$  to  $X_4$  and  $Y_1$  to  $Y_4$ , respectively,  $a_1$  to  $a_4$  each independently represents a number of 0 to 4, but there is no case where all are 0 at the same time,  $b_1$  to  $b_4$  each independently represents a number of 0 to 4, and when  $a_1$  to  $a_4$  and  $b_1$  to  $b_4$  each represents a number of 2 or more, pluralities of  $X_1$ 's to  $X_4$ 's and  $Y_1$ 's to  $Y_4$ 's may each be the same or different; and M is a hydrogen atom, a metal atom, or an oxide, hydroxide or halide thereof.

14. The ink cartridge described in claim 12, which further comprises at least one coloring agent represented by the following general formula (Y-I) as the yellow ink:



wherein  $A^{11}$  and  $B^{11}$  each independently represents a heterocyclic group which may be substituted.

15. An ink jet printer using the ink set described in claim 1 or 2.

16. An image recording method comprising using the ink set described in claim 1 or 2 in conducting color printing.